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Production and Genetic Conservation of Quality Protein Maize (QPM) Seeds by Smallholder Farmers in Karamoja Sub-Region, Uganda

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Abstract

The need for improving availability and access to pure quality maize seeds of protein content instigated the commencement of a programme for production and conservation longe5 seed revitalization system. Longe5 is a maize variety with two amino acids called *tryptophan* and *lucine* that codes protein synthesis. This study aimed at (i) Creating a multi stakeholder innovation platform for commercial production of pure quality Longe5 maize seeds (ii) Training and equipping farmers with practical grower and protein preservation knowledge; (ii) Quality control and marketing of pure quality Longe5 seeds in a sustainable venture (iv) increasing seed volumes through block farming. Successes achieved involved application of effective methodologies including: (a) establishing an inter-linkage platform for sourcing production and marketing information used in QPM seed system; (b) application of nucleus and farmer field school perspective for practical farmer training (c) application of isolations and half-sib methods for genetic purity conservation and (d) establishing block fields for seed production. Four farmer groups were formed each comprising of 30 farmers across selected districts. Under a comprehensive method, farmers commenced with use of foundation seed stocks and produced quality declared seed and finally pure quality seeds after three seasons. The project registered the following benefits including: (i) Platform for QPM seed enterprise established and functionalized (ii) favorable contract agreements for commercial seed scheme developed and operationalized (iii) model for QPM seed profit margin analysis for crop enterprise selection developed and (iv) 5 farmer groups under FFS made operational (v) 60 % trained in production and marketing and consumption of QPM maize seed systems (vi) 79.9 % of farmers applied half-sib method at various isolation perspectives (vii) 100MT of pure QPM maize seeds were produced. Currently growers are knowledgeable of the values, benefits of longe5 seed production, access and availability especially at planting time.

Keywords: Farmer, half-sib, quality protein maize purity, smallholder

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